WOLF CONSERVATION AND MANAGEMENT

IN IDAHO

PROGRESS REPORT 2006

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EXECUTIVE SUMMARY

In January 2005, the U.S. Fish and Wildlife Service (USFWS) published and adopted new regulations (10(j) Rule) governing wolf management within the Nonessential Experimental Population Areas of Idaho south of Interstate Highway 90 (Endangered and Threatened Wildlife and Plants; Regulation for Nonessential Experimental Populations of the Western Distinct Population Segment of the Gray Wolf [50 CFR Part 17.84]). The new 10(j) Rule allowed states, with USFWS-approved wolf management plans, to petition the Secretary of Interior for certain wolf management authorities as an interim measure to delisting. In January 2006, the Secretary of Interior and the Governor of Idaho signed a Memorandum of Agreement (MOA), which transferred most wolf management responsibilities to the State of Idaho. The Idaho Department of Fish and Game (IDFG) is the primary state agency responsible for carrying out wolf management activities in Idaho. In April 2005, the Governor of Idaho and the Nez Perce Tribe (NPT) signed an MOA that outlined responsibilities between the State of Idaho and the NPT in regards to wolf conservation and management. This annual progress report is a cooperative effort between the IDFG and the NPT with contributions from USDA Wildlife Services (WS) summarizing wolf activity and related management in Idaho during 2006.

During 2006, biologists documented 76 resident wolf packs in Idaho and 72 of those remained by the end of the year. A minimum of 415 wolves was observed, and the minimum population was estimated at 673 wolves (Appendix A). In addition, 10 documented border packs counted for Montana and Wyoming established territories straddling the Idaho state boundary and likely spent some time in Idaho. Of the 53 packs known to have reproduced, 41 qualified as breeding pairs by the end of the year. These 53 reproductive packs produced an estimated minimum 185 pups.

In Idaho, wolf packs ranged from near the Canadian border south to Interstate Highway 84, and from the Oregon border east to the Montana and Wyoming borders. Dispersing wolves were occasionally reported in previously unoccupied areas. Thirteen new packs were documented during 2006 of which 3 were removed for livestock depredation control. Four hundred ninety-six wolf observations were reported on IDFG's online website report form during 2006.

Sixty-eight wolves were confirmed to have died in Idaho in 2006. Of known mortalities, agency control and legal landowner take in response to wolf-livestock depredation accounted for 45 deaths, other human causes (including illegal take) 14 deaths, 7 unknown causes, and 2 wolves died of natural causes.

During the 2006 calendar year, 40 cattle, 237 sheep, and 4 dogs were classified by WS as confirmed or probable kills by wolves.

ACKNOWLEDGEMENTS

Wolf management in Idaho is a cooperative effort between the State of Idaho, NPT, WS, and the USFWS. The Governor's Office of Species Conservation director Jim Caswell and program advisor Jeff Allen provided insight, assistance, and oversight. The NPT's Executive Committee and Wildlife Program Director Keith Lawrence provided support and input. Mark Collinge, George Graves, Todd Grimm, Rick Williamson, and other WS field personnel expertly investigated and helped resolve wolf depredations on livestock. Ed Bangs, Jeff Foss, Steve Duke, Craig Tabor, Scott Bragonier, Scott Kabasa, and Scott Winkler with the USFWS provided support and assistance during transition of wolf management authorities. Jim Unsworth and Brad Compton provided support and input and numerous strategy sessions along with making some wolf control calls. We would also like to thank all the Outfitters and Guides for their information and assistance in the backcountry, especially Scott Farr and Travis Hutton for helping us trap wolves in the Middle Fork.

We would like to thank Dave Spicer, Lauri Hanauska-Brown, and Martha Wackenhut for assuming additional regional responsibilities. Carter Niemeyer worked as seasonal wolf biologist and did an excellent job trapping and helping in the livestock conflict arena. Additionally, George Pauley, Mark Hurley, Pete Zager, Jay Crenshaw, Mark and Henry Hill, Jeff Lonneker, Jim Derig, Craig White, Mike Scott, Clay Hickey, Bret Stansberry, Mark Bowman, Josh Stanley, Nate Borg, Dr. Mark Drew, Julie Mulholland, Crystal Christensen, Lynne Stone, and Nadine Hergenrider provided additional field and administrative assistance. Thanks to Roger Fuhrman, Sue Nass, Ed Mitchell, Niels Nokkentved, and Linn French from the communications bureau; and Jon Heggen, enforcement bureau chief, for oversight of field enforcement operations.

Dr. Clarence Binninger, NPT Wolf Recovery Program veterinarian, continues to assist with wolf capture efforts. We appreciate the field assistance of biologists Isaac Babcock and Tyler Hollow, as well as volunteers Brandon Mueller and Kerry Rennie. Thanks are also extended to Mary Allen, NPT Wolf Recovery Project; Jim and Holly Akenson, University of Idaho Taylor Ranch; Montana Fish, Wildlife and Parks wolf staff; Dr. Mike Mitchell and David Ausband, University of Montana Cooperative Wildlife Research Unit; Defenders of Wildlife; Stan Hawkins and Mike Westover.

We especially recognize Mike Dorris, Rod Nielson, Glen Gemelli, and John Ugland, McCall Aviation; Steve and Michele Wolters, Northstar Aviation; Gene Mussler, Sawtooth Aviation; Jon Blakely, AV Center; Sam Kocherhans and Joe Dory, WS; Pete Nelson, Middle Fork Aviation; Arnold Aviation; and Doug Gadwa, Joe Myers, and Brandon Startin, Inter-State Aviation for their expertise and flying safety.

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INTRODUCTION

In 1973, the gray wolf (*Canis lupus*) was listed under the Endangered Species Act (ESA) and protected as an endangered species in the continental United States. The USFWS is mandated to recover federally listed species, including gray wolves. In the early 1980s, individual wolves, naturally dispersing from Canada, recolonized portions of northwest Montana near Glacier National Park. The first USFWS wolf recovery plan was developed through interagency cooperation in 1987 (USFWS 1987). The 1987 plan called for establishing 3 northern Rocky Mountain wolf recovery areas: northwest Montana (NWMT), the greater Yellowstone Area (GYA) predominantly in Wyoming, and central Idaho (CID). The plan called for natural recovery in northwestern Montana and reintroductions of wolves into Yellowstone National Park and central Idaho. Following the guidelines of the 1987 plan, the USFWS developed an Environmental Impact Statement (EIS) for the reintroduction of gray wolves into Yellowstone National Park and central Idaho (USFWS 1994). The EIS designated the GYA and CID recovery areas as Nonessential Experimental Population Areas and called for reintroductions of wolves as nonessential experimental populations, a lesser protective classification under section 10(j) of the ESA, to facilitate wolf management and conflict resolution. The Secretary of Interior approved the final EIS in 1994. In 1995 and 1996, 66 wolves were captured in Alberta and British Columbia, Canada, respectively; 31 of which were reintroduced into Yellowstone National Park and 35 into central Idaho.

Also in 1994, the USFWS developed a Final Rule, which provided management guidelines for recovering nonessential experimental wolf populations in the GYA and CID recovery areas. These guidelines differed somewhat from federal guidelines for fully endangered wolves in the NWMT recovery area. The state of Idaho contains portions of all 3 northern Rocky Mountain recovery areas (Figure 1). Wolves south of Interstate Highway 90 (I-90) are classified as nonessential experimental and are managed according to the provisions of the Final Rule. Wolves north of I-90 are classified and managed under a fully endangered ESA classification.

Efforts between the State of Idaho and the USFWS to develop a state wolf recovery plan were terminated in 1995 when the state legislature rejected a draft plan and forbade the IDFG to engage in wolf recovery activities. In 1995, the NPT completed, and the USFWS approved, the "Wolf Recovery and Management Plan for Idaho", providing the mechanism for the USFWS to enter into a Cooperative Agreement with the NPT to recover and manage wolves in the CID recovery area. Wildlife Services also became partners with the USFWS to assist in investigating depredations and implementing wolf control actions in response to wolf-livestock conflicts.

In March 2002, the Idaho Legislature accepted and passed the Idaho Wolf Conservation and Management Plan (http://fishandgame.idaho.gov/cms/wildlife/wolves/wolf_plan.pdf). In April 2003, the Legislature passed House Bill 294, allowing the state to participate in wolf management, and IDFG to assist the Governor's Office of Species Conservation in implementing the State of Idaho's Wolf Conservation and Management Plan as well as participate in wolf management with the USFWS and the NPT.

In 2003 and 2004, the IDFG participated in wolf management in cooperation with other governments and agencies. The IDFG also started to develop a statewide program in preparation for overseeing wolf management in Idaho. Wolves were monitored and managed under cooperative agreements and work plans between cooperating governments and agencies.

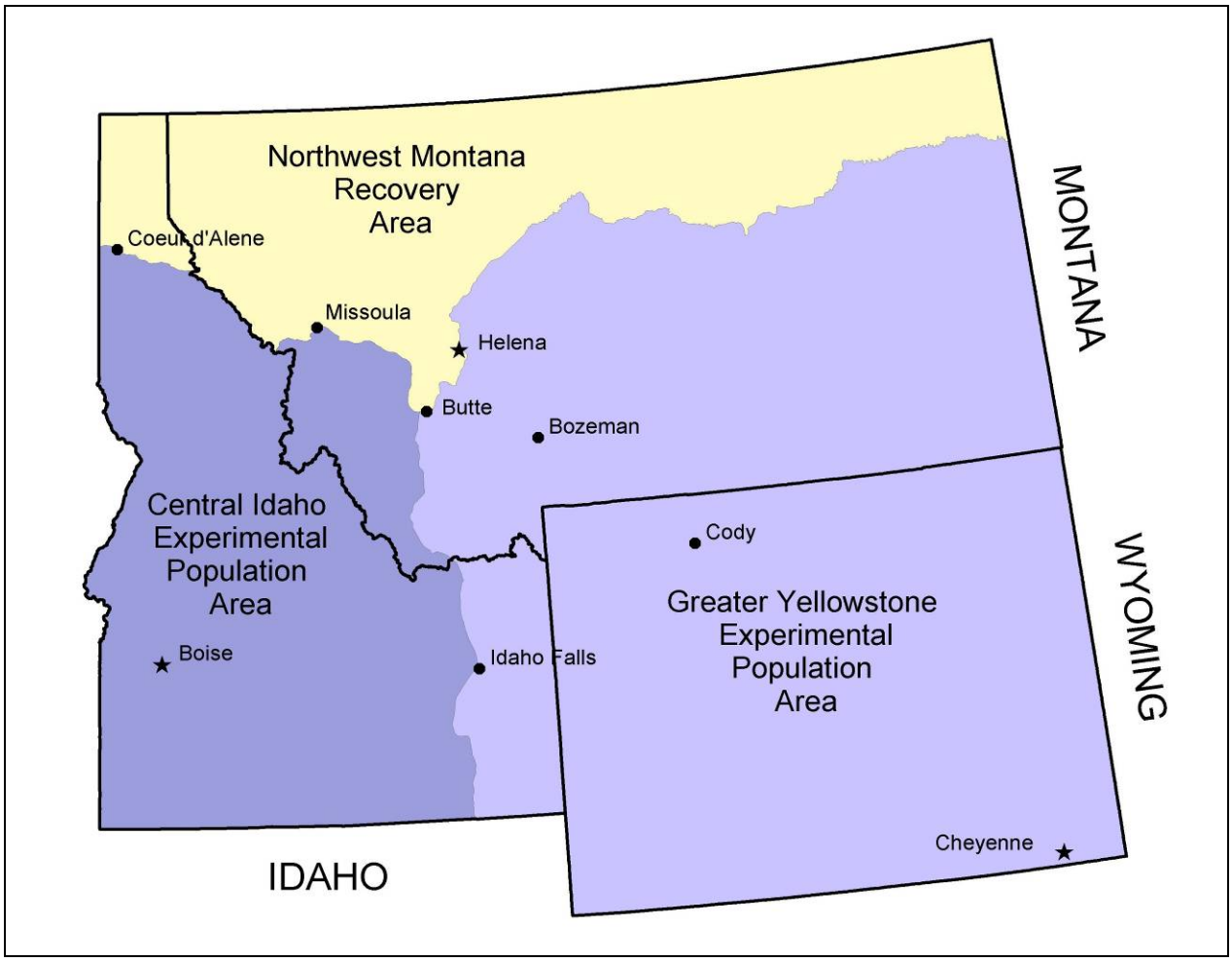

Figure 1. Recovery areas established by the U.S. Fish and Wildlife Service to restore gray wolf populations in the northern Rocky Mountains of Idaho, Montana, and Wyoming. Wolves are naturally recovering in the Northwest Montana Recovery Area, while wolves were reintroduced into the Central Idaho and Greater Yellowstone Experimental Population Areas.

In December 2002, the northern Rocky Mountain wolf population attained the established population recovery goal of 30 breeding pairs of wolves well distributed throughout the 3 states of Idaho, Montana, and Wyoming for 3 consecutive years (USFWS et al. 2003). In 2003, the USFWS adopted regulations that reclassified, or down-listed, wolves from endangered to threatened in Idaho north of I-90; however, in early 2005, a federal court judge remanded these regulations. Consequently, wolves north of I-90 remained classified as fully endangered.

The ultimate goal of federal, state, and tribal governments is to recover and remove wolves from the protections of the ESA (delisting process). The USFWS will initiate the delisting process when the northern Rocky Mountain wolf population meets or exceeds established population goals, and the 3 states of Idaho, Montana, and Wyoming each have USFWS-approved wolf management plans and other legislation and regulations in place to ensure long-term conservation of wolves. By 2003, most federal delisting requirements had been met. Wolf

population recovery goals were met in 2002 and the states of Idaho and Montana had USFWS-approved wolf management plans and adequate state laws in place. Wyoming's wolf management plan, however, was not approved by the USFWS. In response, Wyoming sued the federal government requesting court approval of their plan. Consequently, delisting was delayed until Wyoming makes USFWS-requested adjustments to its plan or federal courts rule that the USFWS accept Wyoming's plan.

In response to this delay, in February 2005, the USFWS revised the Final Rule (10(j) Rule). The new 10(j) Rule (Endangered and Threatened Wildlife and Plants; Regulation for Nonessential Experimental Populations of the Western Distinct Population Segment of the Gray Wolf [50 CFR Part 17.84]) applies only within the Nonessential Experimental Population Areas for states with USFWS-approved wolf management plans; currently Idaho and Montana (Figure 2). The 10(j) Rule is an interim measure to provide Idaho and Montana with more local wolf management authorities until Wyoming's situation is resolved and wolves can be delisted.

The 10(j) Rule allowed the states of Idaho and Montana to petition the Department of Interior to assume many day-to-day wolf management authorities. In January 2006, a Memorandum of Agreement (MOA) between the Secretary of Interior and the Governor of Idaho was signed that transferred most management authorities previously held by the USFWS to Idaho. The State of Idaho currently oversees daily management of wolves in Idaho and coordinates between agencies to fulfill obligations under the 10(j) Rule, the ESA, and the state wolf management plan.

In May 2005, an MOA was signed between the NPT and State of Idaho that outlined wolf monitoring and management responsibilities shared between the 2 governments. Under the MOA, the NPT is responsible for monitoring wolves within IDFG Clearwater Region and McCall Subregion, while the State of Idaho is responsible for monitoring wolves across the rest of the state and management statewide.

This report fulfills annual USFWS requirements to summarize and report wolf status and management activities in Idaho. The goal of the State of Idaho, NPT, USFWS, and WS is to continue to maximize knowledge of wolves in Idaho while reducing conflicts and continuing toward eventual delisting of wolves in the northern Rocky Mountains. (Editor's Note: at the time of this printing, the USFWS has proposed to delist wolves within the northern Rocky Mountains and posted a delisting rule in the Federal Register on February 7, 2007. The process will take at least a year to delist).

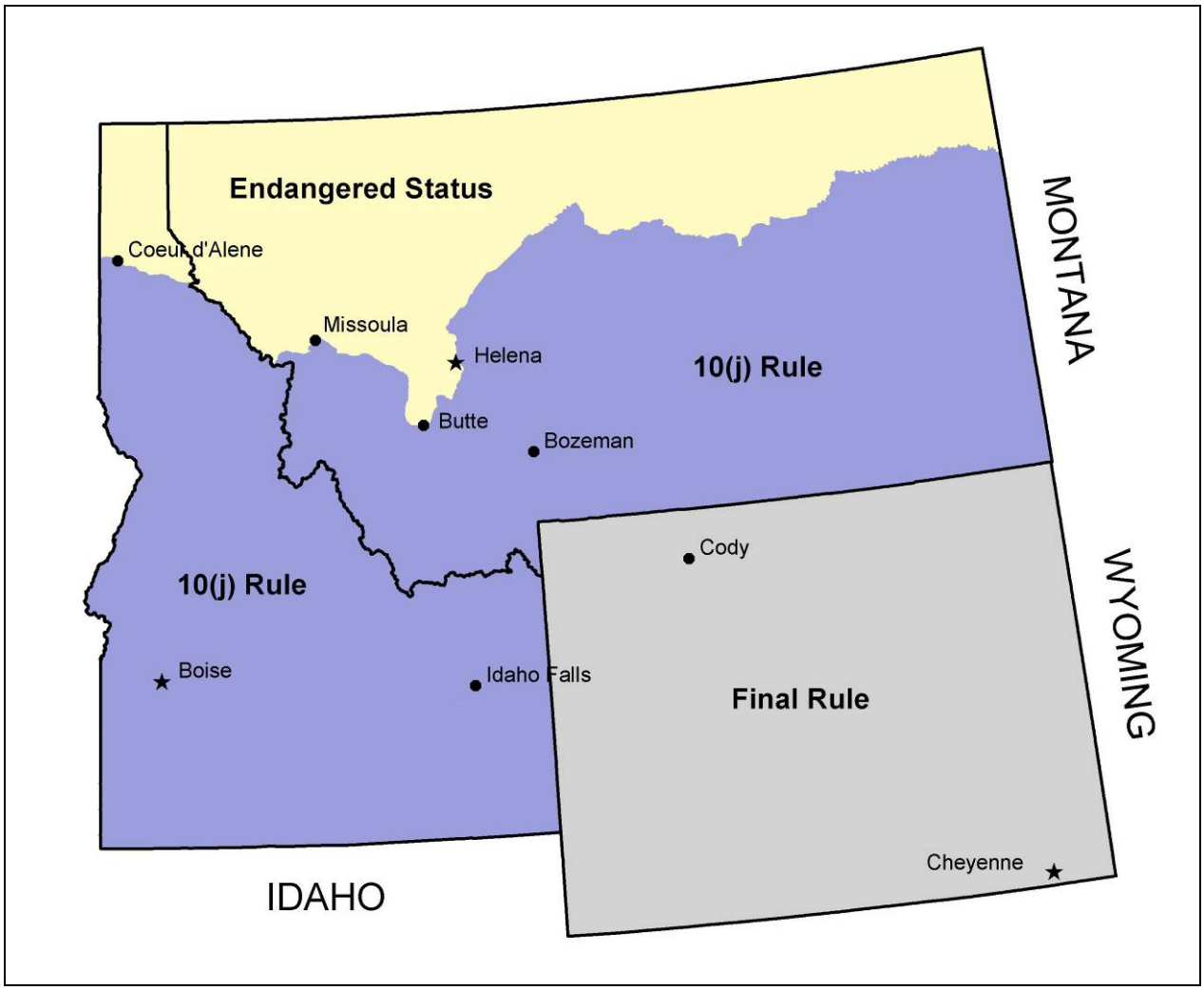

Figure 2. Management areas established by the U.S. Fish and Wildlife Service to restore gray wolf populations in the northern Rocky Mountains of Idaho, Montana, and Wyoming.

STATEWIDE SUMMARY

Previous progress reports by the NPT and the USFWS summarized wolf status within the Central Idaho Experimental Population Area including central Idaho and portions of southwestern Montana. However, this report summarizes the status of wolves and wolf management within the borders of the State of Idaho, including portions of all 3 northern Rocky Mountain recovery areas: endangered wolves in the NWMT recovery area north of I-90; and nonessential experimental wolves within Idaho portions of the CID and GYA recovery areas south of I-90.

Central Idaho, a vast, mountainous, and remote area, is one of the largest remaining undeveloped blocks of public land in the conterminous United States. Central Idaho includes 3 contiguous Wilderness Areas, the Selway-Bitterroot, Frank Church River-of-No-Return, and Gospel Hump, encompassing almost 4 million acres (1.6 million ha), which represents the largest block of federally-designated Wilderness in the lower 48 states.

Three major mountain chains and 2 large river systems create a very diverse landscape, ranging from sagebrush-covered flatlands in the southern part of Idaho, to extremely rugged peaks in the central and northern parts. A moisture gradient also influences the habitats of both wolves and their prey, with wetter maritime climates in the north supporting western red cedar-western hemlock vegetation types, grading into continental climates of Douglas fir and Ponderosa pine to the south. Elevations vary from 1,500 feet (457 m) to just over 12,000 feet (3,657 m). Annual precipitation varies from less than 8 inches (20 cm) at lower elevations to almost 100 inches (254 cm) at upper elevations.

Wolf Population Status

The Idaho wolf population has continued to expand in both numbers and packs since initial reintroductions in 1995 (Figures 3 and 4). By the end of 2006, 72 of 76 documented wolf packs remained extant in Idaho, including 10 of 13 new packs, and a minimum of 415 wolves was observed or monitored by wolf program personnel. Using techniques established in previous years, the Idaho population was estimated at 633 wolves (Appendix A). During the last 2 years, we have been exploring alternative population estimate techniques that are based on the number of documented packs and individuals within the packs, and using a lone wolf correction factor. This new method was peer reviewed by wolf biologists in the northern Rocky Mountains, as well as statisticians from the University of Idaho. **The minimum population estimate using the new technique is 673 (Appendix A), and is the official estimate for Idaho for 2007**.

Distribution, Reproduction, and Population Growth

Wolves were well distributed in the state from the Canadian border, south to the Snake River plain, and east to the Montana and Wyoming borders (Figure 5). Of the 72 documented packs that survived during 2006, territories of all were wholly or predominantly on U.S. Forest Service (USFS) public lands.

Of 72 documented packs, a minimum of 53 produced litters and 41 qualified as breeding pairs (Table 1). A minimum of 185 wolf pups was documented in 2006. Wolf pup counts were conservative estimates because not all pups were observed from packs that were monitored, and some documented packs were not visited. Minimum documented litter size ranged from 1-9 pups. Average minimum litter size for those packs where counts were believed complete (n = 32) was 4.5 pups per litter. Seven new breeding pairs were documented and the reproductive status of 23 documented packs was either not verified or believed to be non-reproductive during 2006. Many areas typically visited to count pups were not available to field crews due to extensive forest fires and subsequent area closures this year.

Comparing population growth rate between 2005 and 2006, using the same population estimation techniques between years, the Idaho wolf population increased by an estimated 22% (nearly identical to the previous year). The social carrying capacity for wolves will likely be below the biological carrying capacity as wolves are managed in concert with other wildlife values, livestock concerns, and management objectives. Ultimately the citizens of Idaho, not habitat, will determine the number of wolves that will persist in the state.

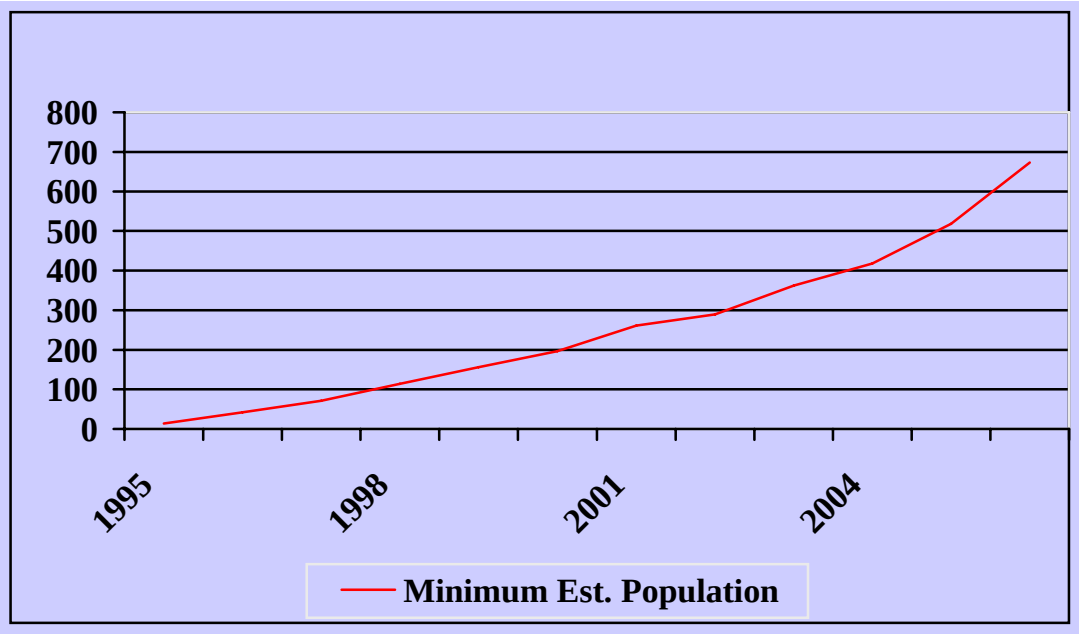

Figure 3. Estimated number of wolves in Idaho, 1995-2006. Annual numbers were based on best information available and were retroactively updated as new information became available.

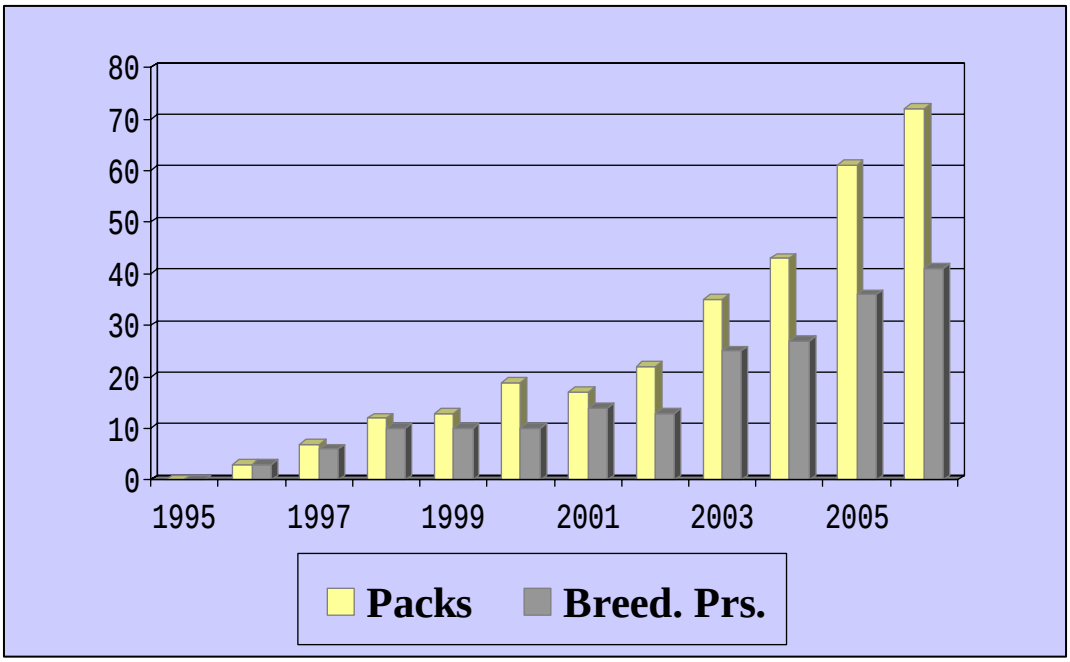

Figure 4. Number of documented wolf packs and breeding pairs in Idaho, 1995-2006. Annual numbers were based on best information available and were retroactively updated as new information became available.

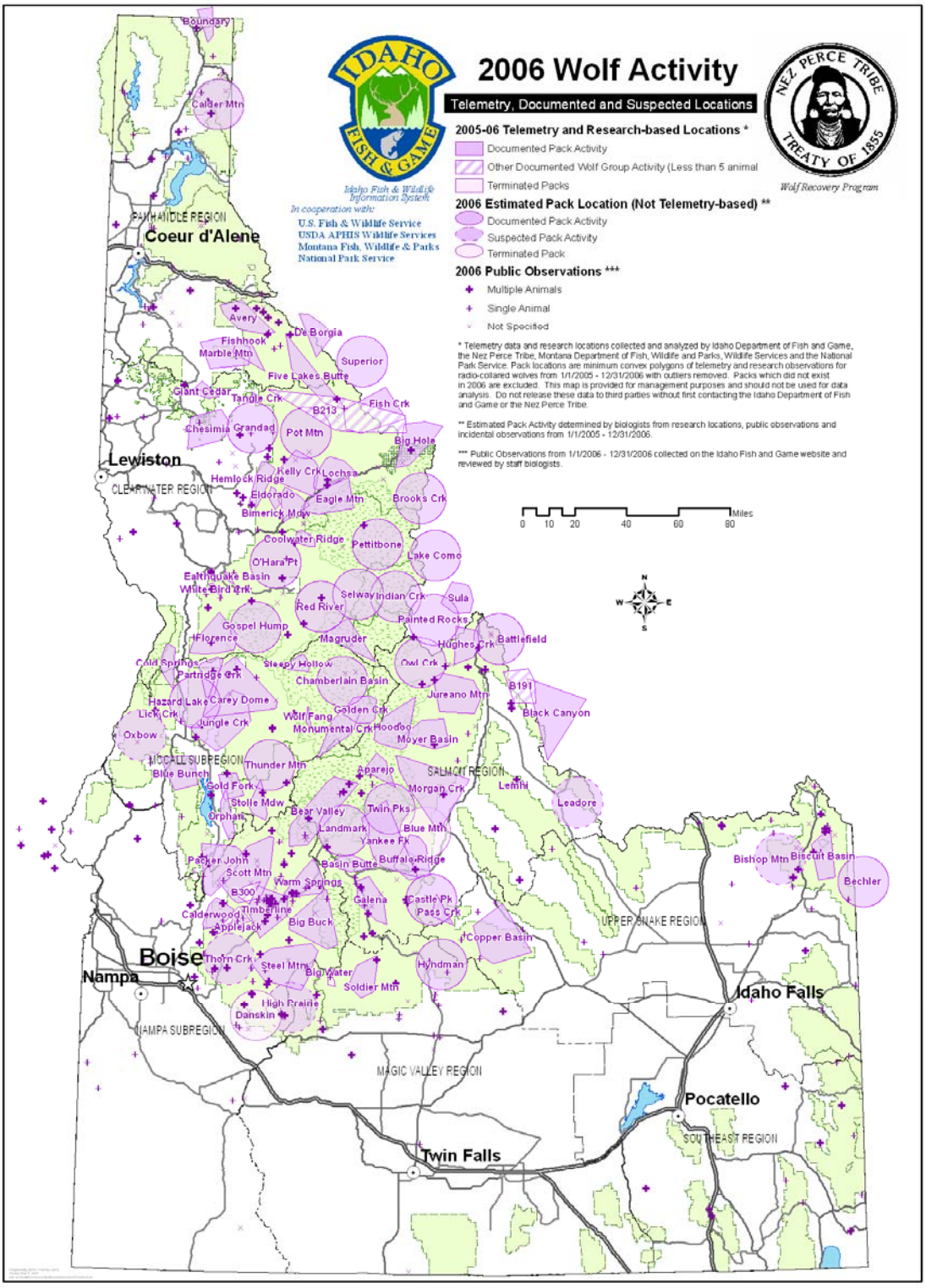

Figure 5. Distribution of documented and suspected wolf packs, other documented groups, and public wolf reports in Idaho, 2006.

Table 1. Number of wolves observed, documented packs, and other documented wolf groups; dispersal; reproductive status; mortality; monitoring status; and wolf-caused livestock depredations within Idaho Department of Fish and Game management regions, 2006.

	Management Region								
	Panhandle	Clearwater	McCall	Nampa	Magic Valley	Southeast	Upper Snake	Salmon	Total
Minimum number wolves detected[a]	35	125	73	61	9	0	14	98	415
Number documented packs	7	23	15	9	3	0	2	17	76
Packs lethally removed	0	0	1	1	1	0	0	1	4
Packs at end of year	7	23	14	8	2	0	2	16	72
Number other documented groups[b]	0	4	1	2	0	0	3	2	12
Groups lost	0	1	0	0	0		2	1	4
Groups at end of year	0	3	1	2	0		1	1	8
Known dispersal	1	2	1	3	1	0	1	4	13
Reproductive status									
Minimum number pups produced	14	56	35	24	7	0	9	40	185
Number reproductive packs	5	15	10	8	2	0	2	11	53
Number breeding pairs[c]	4	12	9	5	1	0	1	9	41
Documented mortalities									
Natural	0	1	0	0	0	0	0	1	2
Control[d]	0	0	12	13	3	0	6	11	45
Other human-caused[e]	1	3	2	1	2	0	2	3	14
Unknown	1	2	0	0	0	0	0	4	7
Monitoring status									
Active radiocollars	8	28	11	13	2	0	5	17	84
Number wolves captured[f]	8	11	10	9	0	0	5	12	55
Number wolves missing[g]	0	1	3	5	0	0	0	0	9
Confirmed & probable wolf-caused livestock losses									
Cattle	0	4	7	5	0	0	8	17	41
Sheep	0	0	145	57	15	0	14	6	237
Dogs	0	3	0	1	0	0	0	0	4

[a] Number of wolves detected by wolf program personnel through observations of wolves or wolf sign and believed alive at end of 2006. Unknown status denoted by "?" Sum of this column does not equate to number of wolves estimated to be present in the population.

[b] Other documented wolf groups include suspected packs and known and suspected mated pairs; verified groups of wolves that do not meet the definition of a documented pack.

Table 1. Continued.

[c] Breeding pairs are the measure of Federal and State wolf recovery and management goals. A breeding pair is defined as "an adult male and an adult female wolf that have produced at least 2 pups that survive until December 31 of the year of their birth…".
[d] Includes agency lethal control and legal take by landowners.
[e] Includes all other human-related deaths.
[f] Includes all wolves captured during 2006 for radiocollaring purposes (excludes captures for lethal control). Most, but not all, were radiocollared.
[g] Radiocollared wolves that became missing in 2006.

Mortality

Sixty-eight documented wolf mortalities were recorded in 2006 (Table 1). Fifty-nine of the confirmed mortalities were human caused, 7 were unknown, and 2 were natural. Of 59 confirmed human-caused mortalities, 39 were wolves controlled for livestock depredations by WS, 8 were illegally taken, 6 were from other human causes, and 6 were legally taken (shot by landowner while harassing or attacking livestock). These figures are underestimates of the true amount of overall mortality occurring within the wolf population, as documenting mortalities of uncollared wolves that are not controlled by agencies is difficult. Only 2 wolf deaths due to natural causes were recorded, another indication that mortality was underestimated, as more individuals likely succumbed to non human-related factors. There were no means to estimate deaths of pups that occurred prior to our visits.

More wolves (n = 39) were lethally controlled by WS in Idaho in 2006 than in any previous year. This mortality stemmed from removals in 14 packs: the Big Water pack (2 wolves) near Pine, Idaho; the Blue Bunch pack (2 wolves) southwest of McCall, Idaho; the Blue Mountain pack (2 wolves) west of Challis, Idaho; the Buffalo Ridge pack (2 wolves) near Clayton, Idaho; the Carey Dome pack (3 wolves) north of McCall; the Copper Basin pack (3 wolves) northwest of Mackay, Idaho; the Danskin pack (4 wolves) near Garden Valley, Idaho; the Gold Fork pack (4 wolves) east of Cascade, Idaho; the Jungle Creek pack (1 wolf) north of McCall, Idaho; the Morgan Creek pack (2 wolves) northwest of Challis, Idaho; the Moyer Basin pack (2 wolves) southwest of Salmon, Idaho; the Packer John pack (2 wolves) near Round Valley , Idaho; the Steel Mountain pack (4 wolves) near Trinity Lakes, Idaho; and the Timberline pack (2 wolves) north of Idaho City, Idaho. An additional 4 wolves were lethally removed from paired or unknown groups of wolves. Finally, 6 wolves were taken in the act of attacking livestock on private property by landowners under the revised 10(j) Rule.

Livestock and Dog Mortalities

During 2006, WS conducted 117 depredation investigations involving reported wolf-killed livestock. Of those, 63 (54%) involved confirmed wolf depredations, 16 (14%) involved probable wolf depredations, 24 (21%) were possible/unknown wolf depredations, and 14 (12%) were due to causes other than wolves. During the calendar year, WS reported 41 cattle, 238 sheep, and 4 dogs that were classified as confirmed or probable wolf kills (Table 1). Non-lethal techniques were used to reduce wolf-livestock conflicts when appropriate.

Law Enforcement

During 2006, USFWS Special Agents and IDFG Conservation Officers cooperatively investigated and reported 23 known and suspected cases of unlawful take of wolves. Of the 23 wolves investigated, 2 died of natural causes, 14 from human causes, and the cause of death for 7 was unknown.

Two people were prosecuted for the same incident through the federal court system. One was implicated in the “taking” of a gray wolf and both were charged with destruction of government property. Other investigations were ongoing.

Research and Management

Agencies continue to coordinate and support scientific research assisting in long-term wolf conservation and management.

Statewide Elk and Mule Deer Ecology Study

During 2006, the IDFG continued its effort to measure the effects of wolf predation, habitat condition, and forage nutrition on elk and mule deer populations across Idaho. Goals were met to radiocollar adult female elk and mule deer, 6-month-old elk calves and deer fawns, and newborn elk calves and deer fawns. Action is on-going to meet research objectives which include 1) determine survival, cause-specific mortality, pregnancy rates, and body condition for radiocollared animals; 2) monitor wolf distribution and abundance within project areas; 3) develop habitat condition and trend maps for Idaho; and 4) manipulate predator populations in project areas and monitor ungulate population responses. This research is providing contemporary estimates of non-hunting mortality, survival, and productivity of elk and deer populations for determining appropriate hunting seasons. Further, this research will help identify and evaluate specific predator and habitat management actions necessary to achieve ungulate population objectives.

Effects of Wolf Predation on North Central Idaho Elk Populations

The IDFG developed a proposal to evaluate effects of wolf predation on elk populations in the Lolo and Selway elk management zones. Elk populations in these 2 zones are below established state management objectives. The proposal included a review of elk population data, cause-specific mortality research being conducted on elk, wolf population data, and modeling conducted to simulate impacts of wolf predation on elk using estimated population parameters. Additionally, this proposal identified conservation measures already implemented, and future management actions and objectives proposed, in an attempt to improve and monitor elk populations in these areas. The proposal calls for removal of 75%, up to 43 wolves, within the Lolo elk management zone to enhance female elk survival. The USFWS has indicated to IDFG that the 10(j) requirement was to show that wolves were the "primary cause of the decline." The proposal clearly identified that the population of elk was in decline before the wolf reintroductions, but the concerns were more for continued impact on the declining elk population that were additive and preventing the population from recovering. The IDFG commission directed staff to continue to monitor and conduct research in the area and potentially submit the proposal for official review if wolf delisting is delayed.

Developing Monitoring Protocols for the Long-term Conservation and Management of Gray Wolves in Idaho

Gray Wolf recovery efforts in the northern Rocky Mountains (Idaho, Montana, and Wyoming) have met with much success, as all 3 states support viable recovered wolf populations. Monitoring and estimating recovering wolf populations in the northern Rocky Mountains has, to date, relied on time-intensive and expensive radiotelemetry techniques. Although this approach worked well in Idaho with initial small population sizes, these techniques are no longer appropriate or cost-effective given the current, much larger recovered population size and nearly statewide distribution.

The NPT, University of Montana Cooperative Wildlife Research Unit (Coop), the USFWS, and the IDFG are collaborating on a multi-year research effort to develop less intensive and more cost-effective approaches for estimating wolf population numbers across the varied landscapes of Idaho. Primary funding for this effort was provided by USFWS through their Tribal Wildlife Grants Program. A 3.5-year research effort will develop standardized wolf monitoring protocols for estimating wolf population parameters appropriate for meeting post-delisting monitoring and management needs, help implement wolf management plans, address wolf management goals and objectives, and ensure long-term conservation and management of the species.

During 2006, collaborators hired a project research assistant and developed a study plan that will be implemented summer 2007. Research will evaluate developing fine and broad scale monitoring approaches. Initial fine-scale approaches will focus initially on scat surveys and DNA analysis appropriate for obtaining high resolution data for specific regions of management concern. A Patch Occupancy model will be developed and evaluated as a broad-scale, statewide, monitoring approach. Fine and broad scale data sets will be combined into a single cohesive monitoring program to address wolf management goals and objectives.

Standardized monitoring protocols will be important in satisfying the USFWS' 5-year post-delisting monitoring requirements and will be crucial to ensure sustainability of the population through effective post-delisting conservation and management of wolves. Results of this effort will also be useful to other states, particularly Montana and Wyoming, developing monitoring protocols for wolves across the northern Rocky Mountains.

Outreach

Program personnel presented 45 information and education programs to a minimum of 1,838 people. Audiences included school students, agency personnel, livestock associations, community groups, sportsmen and outfitters, and legislators. In addition to organized presentations, program personnel talked to numerous members of the public via telephone, email, and in person. Also, news articles were released by IDFG summarizing all wolf-related livestock mortalities as well as wolf mortalities and any other noteworthy news item about wolves on a weekly basis. Program personnel talked with reporters from across Idaho and the nation regularly. Wolves continued to be an interesting topic for the public and television, radio, and print media contacted the program leader often to obtain wolf information and agency perspective. Thus, thousands more people were contacted regularly by program personnel about wolves through radio, television, and print media.

The IDFG online wolf reporting system provided an opportunity for the public and professionals to record wolf observations in Idaho. During 2006, 496 wolf observations were reported on the web site. The online reporting system is a tool which assists biologists locate new packs and allows the public a means to communicate wolf concerns to the appropriate agency.

REGIONAL SUMMARIES

Determining numbers, distribution, and population trends of wolves in Idaho is important for many reasons including effective species management, addressing social concerns of Idahoans, and meeting federal minimum wolf population requirements. A wolf pack is a group of wolves usually consisting of an adult male and female (alpha pair) and their offspring from one or more generations. A pack is first formed when a mated pair produces its first litter of pups. Because a

wolf pack is the basic reproductive unit for this species, enumerating the number of packs within the population is important in determining the reproductive status and long-term viability of the population. As such, the wolf pack has become the unit of measure for federal wolf recovery goals and relisting thresholds, and state wolf management objectives. Unfortunately, because wolf packs are dynamic, varying in size and age and sex composition, do not always travel together in 1 discrete group, and travel across large territories, they are difficult to detect and differentiate from one another in the field. In addition, not all groups of wolves are associated with reproductive packs.

The status of the wolf population was tracked by documenting and counting different wolf groups. Wolf groups reported here are classified as documented packs, suspected packs, potential mated pairs, and lone wolves. In Idaho, a documented pack was defined as 5 or more wolves verified (by program personnel or other reliable sources with evidence such as photos) traveling together, or 2 or more wolves that have had verified reproduction. Documented packs are considered fully reproductively functioning wolf packs containing an alpha pair and offspring. The estimate of the number of wolf packs in the state, for any given year, is based on counts of documented packs. Usually, some information about a documented pack's composition and social structure was known, as program personnel study these multi-generational packs from year to year. Although most wolf packs produce a litter every year, some packs do not. The reproductive history of documented packs is monitored annually. Documented packs that produced litters for a given year were considered reproductive packs for that year, and documented packs that did not produce litters, or for which reproduction was not verified, were considered non-reproductive packs for the year.

In addition, the USFWS has established a stricter definition for a wolf pack called a breeding pair. The USFWS defines a breeding pair as "An adult male and an adult female wolf that have produced at least 2 pups that survived until December 31 of the year of their birth…" (USFWS 1994). Breeding pairs are the USFWS' unit of measure for wolf recovery goals and relisting thresholds in the northern Rocky Mountains. Until wolves are delisted, and for a 5-year period following delisting, the USFWS will require the State of Idaho to monitor the numbers of breeding pairs. For any given year, all documented reproductive packs that survive intact or are composed of two adults plus a minimum of 2 pups, until December 31, are counted as breeding pairs for that year.

Suspected packs are known or suspected groups of wolves with unknown pack composition (numbers, sex and age structure, social structure) and reproductive history. A suspected pack is defined as multiple wolves or wolf activity repeatedly reported or documented that has not been verified as a pack. Suspected packs are assigned to geographic areas where, based on available evidence, wolf pack presence is suspected but not verified. Evidence can include multiple unverified reports suggesting pack presence, or verified presence of wolves of unknown status or composition.

Most documented packs were resident packs with year-round territories contained wholly within Idaho. However, some documented and suspected packs, called border packs, were only part-year residents of Idaho. Border packs had known or suspected territories that overlapped state boundaries between Idaho and neighboring states of Montana and Wyoming. The states of Idaho, Montana, and Wyoming have agreed, for federal recovery purposes, that border packs would be assigned to that state in which border packs den, or spend the majority of their time. For purposes of this report, we listed documented and suspected border packs for each IDFG

region and indicated the state to which the pack had been assigned for 2006. Specific information for border packs assigned to Montana and Wyoming were not provided in this report, with the exception of livestock depredations or wolf mortalities occurring within Idaho. For more information on Montana and Wyoming border packs, please see the Rocky Mountain Wolf Recovery 2006 Interagency Annual Report (USFWS et al. 2007).

Potential mated pairs are known small groups of wolves traveling together that have not yet formed a pack, but are anticipated to produce their first litter of pups the following year. Lone wolves are wolves not associated with a territory or other wolves. Usually, identified potential mated pairs and lone wolves are actively monitored through radiotelemetry and some information is known about their numbers, age and sex composition, and home range. For purposes of this report, potential mated pairs and lone wolves have been grouped into a single category called "Other Documented Wolf Groups."

Lastly, many areas of potential wolf activity are monitored based on sporadic reports to determine if packs are present; however, these are not reported herein. Also, any verifications of new wolf pack activity that occurred after December 31, 2006, are not included in the information presented below.

Monitoring the status of these different wolf groups from year to year assists the Recovery Program in verifying as many documented wolf packs as possible annually, and provides more accurate information for estimating and tracking wolf population numbers and trends.

Panhandle Region

Wolves found north of I-90 in this region are part of the NWMT Recovery Area and are classified as endangered. Wolves south of I-90 along the southern boundary of this region are within the CID recovery area and are classified as nonessential experimental animals.

There were 5 documented resident and 4 documented border packs in the Panhandle Region in 2006 (Figure 6; Table 2). Five of the 9 documented packs (Avery, Calder Mountain, Tangle Creek, Marble Mountain, and De Borgia) produced litters, 4 of which qualified as breeding pairs. The Calder Mountain border pack shared time between Idaho and Montana, and was counted as an Idaho pack, while De Borgia and Superior packs were counted by Montana. The Boundary pack moves between Idaho and Canada.

Two wolf-livestock conflicts were investigated in this region; one was considered a possible wolf kill and the other was a coyote kill. No dogs (herding/guarding or hunting) were reported killed by wolves in 2006.

Documented Resident Packs

Avery
This pack was first documented in 2005, but was suspected in 2004. In spring 2006, female B233 was found dead by gun shot. Personnel did not get a pup count on this pack but observed multiple pup sign during trapping efforts in early October. Trapping for this pack was unsuccessful in 2006, but alpha male B234 remains collared. The Avery pack ranges from the St. Joe River north almost to I-90 and from Elsie Peak east to Bird Creek. Ten wolves were

observed on a December monitoring flight. The Avery pack was counted as a breeding pair for 2006.

Fishhook
Two new radiocollars were put on wolves in this pack in 2006, female pup B293 and suspected breeding male B294. Two pups were observed in early August. In late October, female pup B293 was found dead from unknown causes. IDFG personnel observed 6 wolves during monitoring flights. Because 1 of the 2 pups died, Fishhook was not counted as a breeding pair for 2006.

Five Lakes Butte
Female B213 was not located with B212 during 2006. However both wolves are using portions of what has been considered Five Lakes Butte territory. Two trapping and scouting efforts into the traditional Five Lakes Butte denning area and rendezvous sites turned up no sign of reproduction. During December, B212 was observed with 2 other wolves on several occasions in the northern portion of the territory while B213 was observed with 2 other wolves in the southern portion of the territory. The Five Lakes Butte pack was not counted as a breeding pair for 2006.

Marble Mountain
Three pups were documented in this pack in late September. Female pup B314 was radiocollared on 25 September; she weighed 70 lb. at that time. We have had consistent counts of 6 wolves during monitoring flights. This pack ranges from south of Grandmother Mountain west to Blackwell Hump. Marble Mountain was counted as a breeding pair for 2006.

Tangle Creek
This is the first year Tangle Creek pack has been monitored; however, evidence indicates wolves were in the area in 2005. Three pups were confirmed during summer trapping efforts. Male pups B302, B310, and B311 were captured and collared in September, but B302 slipped his collar. He was recaptured but not recollared. The signal for B311 has not been heard since November. This pack ranges south from Freeze Out Ridge to the north and west shores of Dworshak Reservoir. Tangle Creek was counted as a breeding pair in 2006.

<u>Documented Border Packs</u>

Boundary
This newly documented pack was documented when IDFG bear research personnel captured subadult female B296 in a bear snare in late August. While no other wolves have been observed, WS investigated a wolf-livestock complaint in the Hull Mountain area during February, so we are considering this a confirmed pack. Only a few aerial locations were gathered for this pack, but from those locations we know they range from Wall Mountain north to at least 5 miles into Canada. The Boundary pack was not counted as a breeding pair for 2006.

Calder Mountain (ID)
This pack was first documented in 2005; however, no wolves were radiocollared. Successful reproduction was documented in 2006, but the only adult wolf captured escaped from the trap before it was anesthetized and collared. Calder Mountain pack dens near a popular horse trail that receives high use during prime trapping season making trapping efforts difficult. This pack

is a border pack between Montana and Idaho and was counted as an Idaho breeding pair for 2006.

De Borgia (MT)
One wolf was radiocollared in the De Borgia pack during summer 2006. This pack is monitored by Montana Department of Fish, Wildlife, and Parks (MTFWP), and IDFG personnel.
De Borgia is considered a border pack between Idaho and Montana and was counted as a breeding pair by Montana in 2006.

Superior (MT)
Superior is a confirmed pack for 2006, but reproduction was not documented. They are considered a border pack between Montana and Idaho. Superior was not considered a breeding pair for 2006.